

**In the Drawings:**

The attached sheets (sheets1-38) of drawings include minor amendments merely for the purpose of clarification and such that the drawings are in compliance with 37 CFR 1.84(e). Applicant respectfully submits an attached complete set of Replacement Sheet drawings (FIGS. 1-38 on 38 sheets).

**Remarks**

**A. Pending Claims**

Claims 1019, 1033, 1035-1036, 1039, 1053, and 1055-1056 are pending in the application. Claims 1019, 1033, 1035-1036, 1039, 1053, and 1055-1056 have been allowed. Claims 1021-1023, 1029, 1031, 1037, 1041-1043, 1049, 1051, and 1057 have been rejected. Claims 1021-1023, 1029, 1031, 1037, 1041-1043, 1049, 1051, and 1057 have been cancelled.

**B. The Claims Are Definite Pursuant To 35 U.S.C. § 112 First Paragraph**

The Office Action includes a rejection of claims 1022-1023 and 1042-1043 under 35 U.S.C. 112 First Paragraph as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant respectfully disagrees with these rejections; however, in order to expedite prosecution of the present application the rejected claims 1022-1023 and 1042-1043 have been cancelled.

The Office Action states:

The claims lack support in the specification as written. According to the specification (e.g., pages 31-45), the instant compounds are synthesized from natural carotenoid or derivative thereof. Therefore, the compounds being synthetic products cannot be deemed from natural source(s). By deleting the claims the rejection would be overcome.

Deleted claims 1022 and 1042 describe a combination of features including, but not limited to, the features of “wherein the chemical compound is derived from a naturally occurring carotenoid.” Deleted claims 1023 and 1043 describe a combination of features including, but not limited to, the features of “wherein the chemical compound

is derived from astaxanthin obtained from a natural source.” Applicant submits the claimed chemical compounds may be synthesized from “naturally occurring carotenoids” or synthesized from “astaxanthin obtained from a natural source.” The rejected claims do not claim that the chemical compounds themselves are obtained from a natural source, however, in order to expedite prosecution of the present application the rejected claims 1022-1023 and 1042-1043 have been cancelled.

**C. The Claims Are Definite Pursuant To 35 U.S.C. § 112 Second Paragraph**

The Office Action includes a rejection of claims 1021, 1022, 1023, 1029, 1031, 1037, 1041-1043, 1049, 1051, and 1057 under 35 U.S.C. 112 Second Paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant respectfully disagrees with these rejections; however, in order to expedite prosecution of the present application the rejected claims 1021, 1022, 1023, 1029, 1031, 1037, 1041-1043, 1049, 1051, and 1057 have been cancelled.

The Office Action states:

The claims improperly depend from their independent claims for failure to limit the scope of the independent claims. The claims and their independent claims are drawn to the same compounds. The dependent claims cite properties or sources of the compounds. According to the specification the compounds of the independent claims have the cited properties and are from the cited sources. Therefore, claims 1021-1023, 1029, 1031, 1037, 1041-1043, 1049, 1051, 1057 are duplicates of their independent claims. By deleting the claims the rejection would be overcome. Applicant should note that properties, functions and utilities are not limitations in a composition or product claim under the US patent practice.

Deleted claims 1022 and 1042 describe a combination of features including, but not limited to, the features of “wherein the chemical compound is derived from a naturally occurring carotenoid.” Deleted claims 1023 and 1043 describe a combination

of features including, but not limited to, the features of “wherein the chemical compound is derived from astaxanthin obtained from a natural source.” Applicant submits the claimed chemical compounds may be synthesized from “naturally occurring carotenoids” and from “astaxanthin obtained from a natural source”, or may be synthesized from synthetic and/or synthetically derived carotenoids. Therefore the Applicant submits claims 1022-1023 and 1042-1043 are not duplicates of their independent claims.

Deleted claims 1021 and 1041 describe a combination of features including, but not limited to, the features of “wherein the composition is at least partially water soluble.” Deleted claims 1029 and 1049 describe a combination of features including, but not limited to, the features of “wherein the composition is at least partially water dispersible.” Deleted claims 1031 and 1051 describe a combination of features including, but not limited to, the features of “wherein the composition is at least partially hydrophylic.” Applicant submits the independent claims are directed to “a composition comprising a chemical compound” and therefore the composition may include other species which may counteract the natural properties of the claimed compounds. The dependent claims are directed towards properties of the claimed “composition.” Applicant submits claims 1021, 1029, 1031, 1041, 1049, and 1051 do limit the scope of the corresponding independent claims.

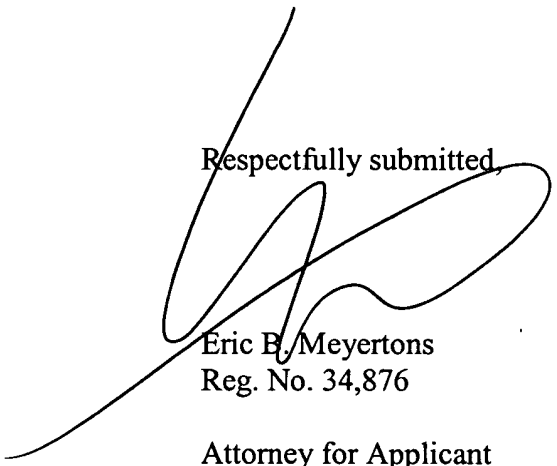
Deleted claims 1037 and 1057 describe a combination of features including, but not limited to, the features of “wherein the chemical compound is optically active.” Independent claims 1037 and 1057 embrace both optically active and racemic compounds. Thus, Applicant submits claims 1037 and 1057 are not duplicates of their independent claims. In order to expedite prosecution of the present application the rejected claims 1021, 1022, 1023, 1029, 1031, 1037, 1041-1043, 1049, 1051, and 1057 have been cancelled.

**D. Conclusion**

Applicant submits that the claims are in condition for allowance. Favorable reconsideration is respectfully requested.

Applicant believes no fee are due in association with the submission of this and any accompanying documents. If any extension of time is required, Applicant hereby requests the appropriate extension of time. If any fees are required, please appropriately charge those fees to Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account Number 50-1505/5777-00201/EBM.

Respectfully submitted,



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